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A pernicious mean corpuscular volume

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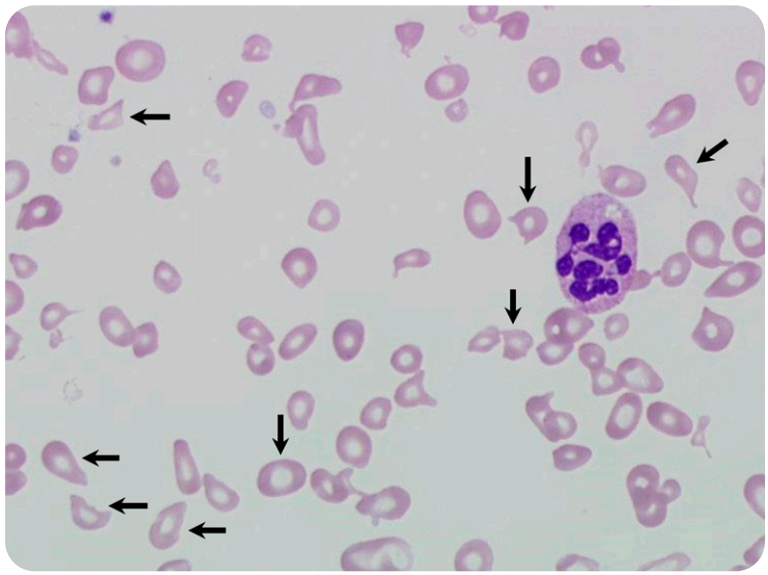

A 44-year-old woman was referred for asthenia. Laboratory evaluation showed normocytic anemia (2.2 g/dL hemoglobin, mean corpuscular volume [MCV] of 82 fL, 9.18 × 10^9/L reticulocytes) with an increased red cell distribution width (RDW, 43.2%; normal range, <20%), thrombocytopenia (69 × 10^9/L), and a normal neutrophil count. Low haptoglobin (<0.1 g/L) and elevated lactate dehydrogenase (8649 U/L; normal range, 135-214 U/L) attested to hemolysis. Blood smear examination revealed poikilocytosis, with ovalocytes, dacryocytes, and schizocytes (original magnification ×50; May-Grünwald–Giemsa stain). We also observed hypersegmented neutrophils, suggesting a vitamin deficiency. Indeed, serum vitamin B_{12} was <50 pg/mL (normal range, 223-1100 pg/mL). In the context of probable pernicious anemia, she received vitamin B_{12} therapy, and all blood counts recovered to near-normal values within 2 months, including RDW (24%), except for the MCV (67.8 fL). Gene sequencing further revealed an α-thalassemia minor.

Our patient demonstrated all megaloblastic anemia hallmarks except for macrocytosis, which was obscured by an unrecognized hemoglobinopathy. This case highlights the contribution of routine blood smear examination in evaluation of anemia. Schizocytes and dacryocytes, which are generally found in microangiopathic hemolytic anemia and myelofibrosis, respectively, should be considered here as part of the poikilocytosis. Identification of hypersegmented neutrophils with intramedullary hemolysis should encourage the search of vitamin deficiency, even in the absence of macrocytosis.

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